Developing a Solar Pilot Program for Low-and Moderate-Income Households in Virginia

Virginia Clean Energy Advisory Board Meeting

March 24th, 2021

CleanEnergy States Alliance

Presentation Overview

1. CESA's Role
2. Pilot Program Design Considerations
    a) Available Funding for the Pilot Program
    b) Residential Solar Project Economics in Virginia
    c) Potential Pilot Locations
    d) Stakeholder Engagement
    e) Statutory Considerations
3. Q&A and Feedback

Presenter Team

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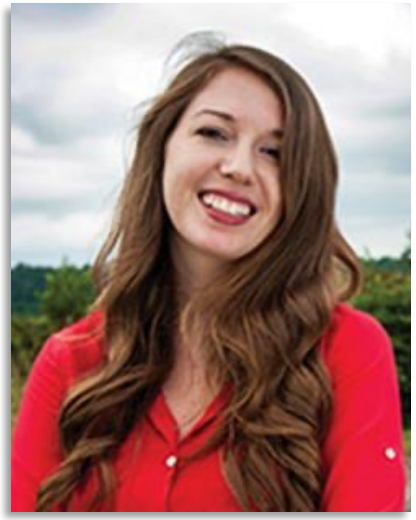

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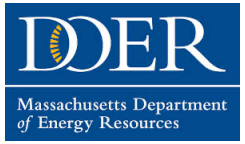

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CESA Work Plan

- CESA was awarded an anonymous grant to assist DMME and the CEAB in the development of a solar pilot for LMI households in Virginia over the course of 1 year.
- Areas where we can assist include:
    1. Background Market Research
    2. LMI Solar Program Design
    3. Stakeholder Engagement and Program Refinement
    4. Preparation of a Program Solicitation
    5. Advising on Program Implementation and Marketing
    6. Production of Educational and Promotional Materials
    7. Early Program Evaluation and Building a Case for Support
    8. Sharing Successes and Lessons Learned

Pilot Program Design Considerations

Funding for a Pilot Program

1. $200,000 in re-purposed federal American Recovery and Reinvestment Act (ARRA) funds, which is being placed into Virginia's Low-to-Moderate Income Solar Loan and Rebate Fund.
2. Through CESA's US DOE-supported *Scaling Up Solar for Under-Resourced Communities* project, Virginia may apply to for up to $50,000 to support the launch of a solar program for LMI homeowners.
3. In the future, DMME may petition for public funding as part of the Commonwealth's annual budget process or explore other existing public funding sources or private investment to support its program.

Residential Solar Economics in VA

Methodology

- Three Locations/Utility Territories
- System Size
- Financing
- Federal Investment Tax Credit (ITC)

Residential Solar Economics in VA

Key Indicators

- First year net monthly savings
- 25-year average monthly savings
- Payback period

Residential Solar Economics in VA

Findings

- Different locations/utility territories – no significant difference
- Scenarios did not yield savings in first year
  - Market rate vs reduced rate loan
  - Tax credit included in or excluded from loan
  - $5,000 rebate scenario

Residential Solar Economics in VA

Incentive Needed for 1st Year Savings

- ITC deducted ~$6,500 rebate
- ITC not deducted ~$12,000 rebate

With local property tax exemption

- ~$4,750 rebate (ITC deducted) or $10,000 rebate (ITC not deducted)

Residential Solar Economics in VA

Solar Lease

- Legal uncertainty
- First year savings, lower lifetime savings
- ITC claimed by lessor

Key Takeaways

1. Initial negative cashflow from taking out a loan to finance a solar system on top of Virginia's relatively low costs of electricity makes it difficult to pencil out residential solar projects for LMI households.

2. A 25-year lease offers a preferable financing terms for LMI homeowners in Virginia.

3. Solar property tax exemption has a substantial impact on the amount of subsidy needed to achieve cash-flow positive solar transactions for Virginians.

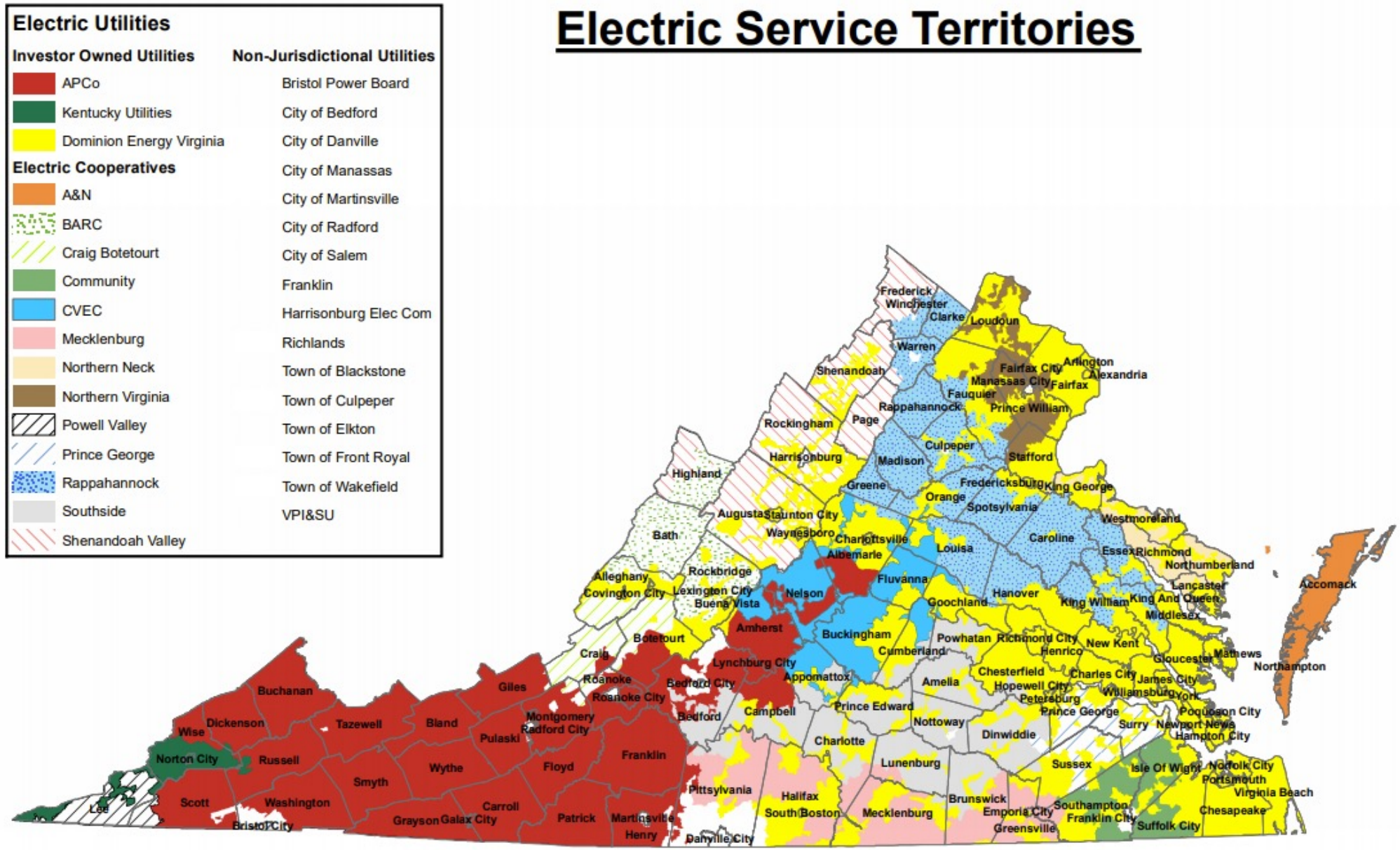
4. Based on NCCETC's analysis, we estimate that about $6,500 in public subsidy per solar project will be necessary to ensure participating LMI households benefit from their solar transactions.

5. Assuming an initial pilot program financing budget of $200,000 and approximately $6,500 in direct public subsidy per project, about 30 solar installations could be completed under the pilot.

Locational Variables

Variables	Unit / Additional Context
• Jurisdiction	Counties and cities
• Electric Utility Service Territory	To avoid program redundancy. Dominion Energy and Appalachian Power are developing LMI solar programs for their customers
• Energy Burden	Average annual energy expenditure as a percentage of income
• Energy Costs	Average annual household costs for energy
• Single-Family Owner-Occupied Housing Count	Since Virginia's shared solar program will be accessible to renters, we focused on single-family homeowners
• LMI Housing Count	80% area median income and below
• Percentage of LMI single-family	LMI single-family housing count over total housing count
• Population	Urban and rural distinctions
• Solar Property Tax Exemption Status	Based on 2018 data. VA allows counties and municipalities to exempt or partially exempt solar equipment from property taxes

Electric Service Territories



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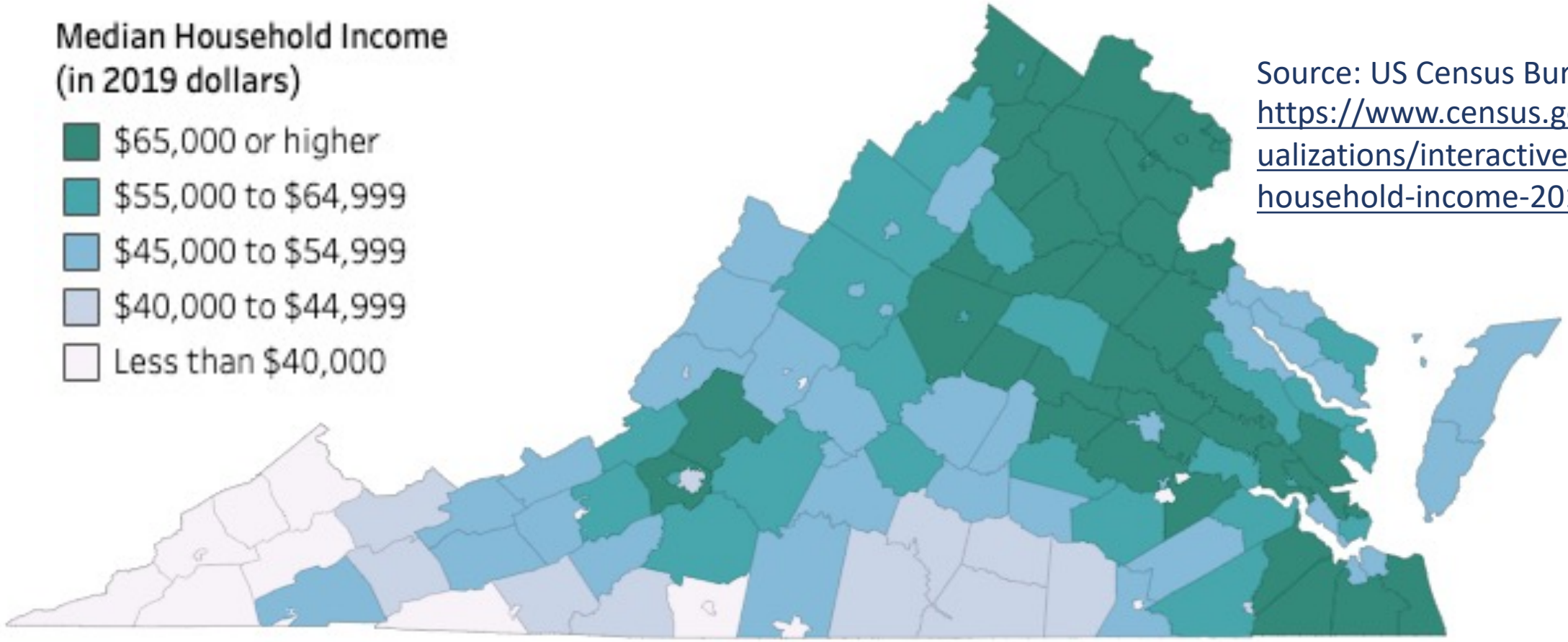
Median Household Income by County (2015-2019)



Source: US Census Bureau, https://www.census.gov/library/visualizations/interactive/acs-median-household-income-2015-2019.html

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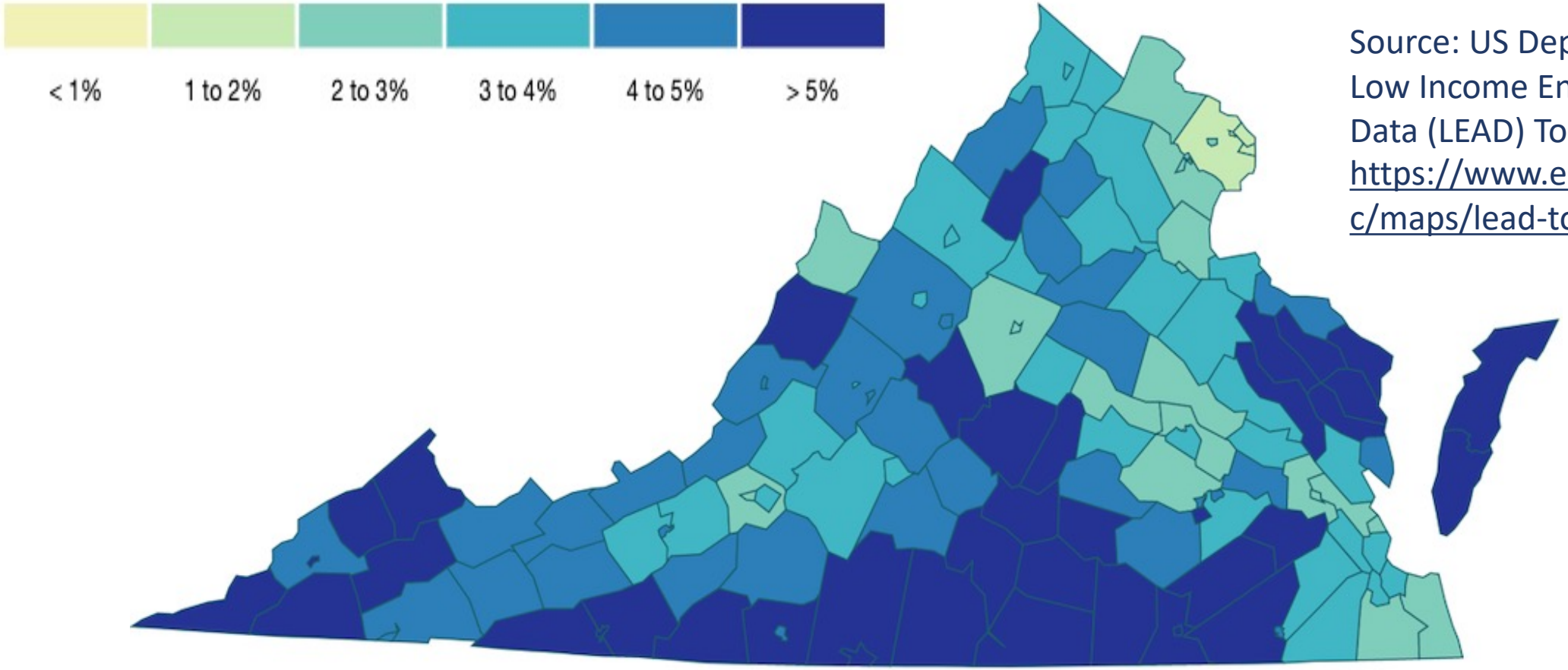
Average Energy Burden by County



Source: US Department of Energy Low Income Energy Affordability Data (LEAD) Tool, https://www.energy.gov/eere/slsc/maps/lead-tool#

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Potential Target Jurisdictions to Consider

21 Potential Jurisdictions

in

6 potential counties

encompassing 9 potential cities

and

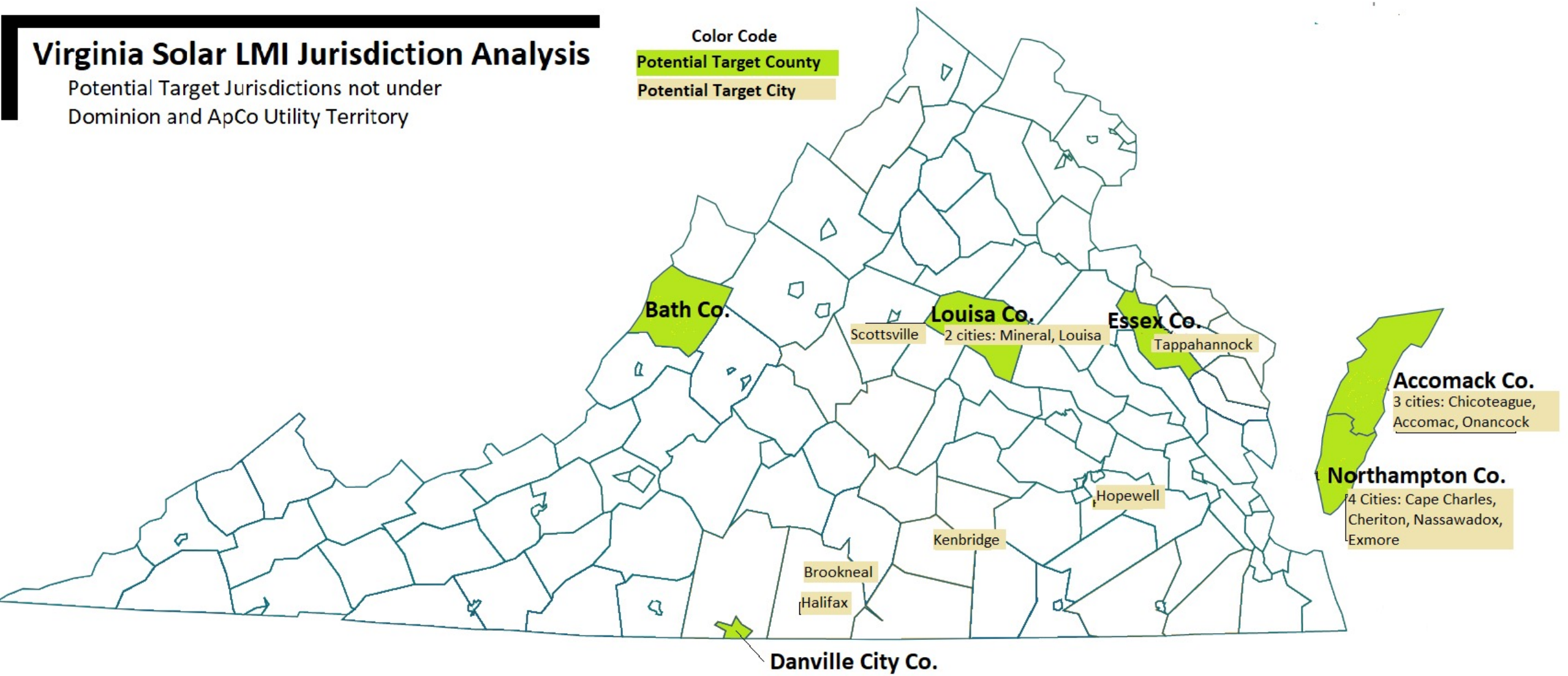
6 additional potential cities

Potential Pilot Jurisdictions

Potential Target County	Potential Target Cities	Primary Utility Service Territory
Accomack County	Chincoteague, Accomac, Onancock	A&N Electric Cooperative
Louisa County	Louisa, Mineral	Rappahannock Electric Cooperative
Northampton County	Cape Charles, Cheriton, Nassawadox, Exmore	A&N Electric Cooperative
Bath County		BARC Electric Cooperative
Essex County		Rappahannock Electric Cooperative
Danville city County		Danville Utilities
	Brookneal, Halifax	Mecklenburg Electric Cooperative
	Tappahannock	Rappahannock Electric Cooperative
	Hopewell	Prince George Electric Cooperative
	Kenbridge	Southside Electric Cooperative
	Scottsville	Central Virginia Electric Cooperative

Virginia Solar LMI Jurisdiction Analysis

Potential Target Jurisdictions not under
Dominion and ApCo Utility Territory



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Stakeholder Engagement

Outreach Points

1. Soliciting interest and ideas to inform program design
2. Providing feedback on a program design and implementation plan
3. Assisting with program rollout and promotion
4. Assessing program effectiveness

Stakeholder Engagement

Key early stakeholders in target jurisdictions:

- Community-based organizations
- WAP providers
- Local utility representatives
- Municipal officials—permitting officials and community representatives
- Local solar installers
- Single-family affordable housing providers

Statutory Considerations

Third-Party System Ownership

Availability of third-party system ownership (residential solar leases and PPAs) in Virginia

Income Threshold

§ 45.1-399(A): “The Program shall be open to any Virginia resident whose household income is at or below 80 percent of the state median income or regional median income, whichever is greater.”

Requirement to Demonstrate Reduced Energy Consumption through Prior Efficiency Upgrades

§ 45.1-399(B)(iii): “Each application shall include…evidence of the completion of a home performance audit, conducted by a qualified local weatherization service provider, before and after installation of energy efficiency services…to demonstrate that such energy efficiency services were completed and resulted in a reduction in consumption of at least 12 percent…”

Local Installer Requirement

§ 45.1-399(E)(iv): “All of the work of installing the energy system shall be completed by a licensed contractor that…has installed a minimum of 150 net-metered residential solar systems in Virginia.”

Incentive Payment

§ 45.1-399(G): "…The Director shall disburse from the Low-to-Moderate Income Solar Loan and Rebate Fund … the loan or rebate for each approved claim within 60 days of its receipt of the claim and according to the order in which its respective application was approved."

Incentive Cap

§ 45.1-399(G): “Any rebate or grant shall be in the amount of no more than $2 per DC watt for up to six kilowatts of solar capacity installed.”

Questions or Comments?

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Thank You

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